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मानक

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“Step Out From the Old to the New”

IS 3993 (1993): Trays, instruments [MHD 14: Hospital Planning]



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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

उपकरण रखने के लिए ट्रे — विशिष्ट

(दूसरा पुनरीक्षण)

Indian Standard

TRAYS, INSTRUMENTS — SPECIFICATION

(*Second Revision*)

UDC 615-478-79

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BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG

NEW DELHI 110002

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Hospital Equipment Sectional Committee had been approved by the Medical Equipment and Hospital Planning Division Council.

This standard was first revised in 1982. The second revision of this standard has been done to incorporate some modifications based on the experience gained through the implementation of this standard and to align it with the latest practices being followed at the national level. In this revision, dimensions of handle and lid have been modified to maintain identical shape and size of the products made of different materials.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TRAYS, INSTRUMENTS — SPECIFICATION

(Second Revision)

1 SCOPE

1.1 This standard prescribes the requirements of stainless steel, enamelled iron and glass instruments trays.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard.

<i>IS No.</i>	<i>Title</i>
513 : 1986	Cold rolled low carbon steel sheets and strips (<i>third revision</i>)
1382 : 1981	Glossary of terms relating to glass and glassware (<i>first revision</i>)
2303 : 1963	Method of grading glass for alkalinity
2717 : 1979	Glossary of terms relating to vitreous enamelware and ceramic-metal systems (<i>first revision</i>)
3972 : 1968	Methods of test for vitreous enamelware
5522 : 1992	Stainless steel sheets and strips for utensils (<i>first revision</i>)

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions given in IS 1382 : 1981 and IS 2717 : 1979 shall apply.

4 MATERIALS

4.1 Stainless Steel

Stainless steel shall conform to Designation X04Cr18Ni11 or X07Cr18Ni9 of IS 5522 : 1992.

4.2 Enamelled Iron

The base metal shall conform to IS 513 : 1986 and the coating shall comprise of inorganic vitreous enamel fused to the surface of the base metal.

4.3 Glass

The glass used shall be colourless, corrosion resistant, well-annealed and free from striae,

strain and other defects. It shall also conform to Type 1 of IS 2303 : 1963.

5 SHAPE AND DIMENSIONS

5.1 The shape of instruments trays and their lids shall generally conform to Fig. 1, 2 and 3. The bottom shall be dished, ribbed or plain. However, in case of enamelled iron trays, the bottom and lid shall be slightly curved. The shape of the handle of the lid shall be as shown in respective figures.

5.1.1 The instruments trays shall have the rim as agreed to between the purchaser and the manufacturer.

5.1.2 The fitting of the lid and the tray shall be such that the play between the two does not exceed 2.0 mm.

5.1.3 There shall be 3 to 5 ribs widthwise depending on the size of the tray (*see Table 1 also*).

5.2 Dimensions

The dimensions of instruments trays shall be as given in Table 1 read with Fig. 1, 2 and 3 for all the trays (stainless steel, enamelled iron and glass) subject to the following tolerances:

<i>Dimensions</i> mm	<i>Tolerance</i> mm
Up to 50	±1
51 to 100	±2
101 to 200	±3
201 and above	±5

5.2.1 The enamelled iron trays may have two or three coats of enamel and the thickness of enamel shall be between 0.12 mm and 0.38 mm.

6 MANUFACTURE, WORKMANSHIP AND FINISH

6.1 The instruments trays shall be so constructed that these shall not rock when placed on a level surface.

6.2 Stainless Steel Trays

The trays shall be polished bright. These shall also be free from sharp or open edges, distortion, dents, wrinkles, wavy surface, burrs, scratches and pittings.

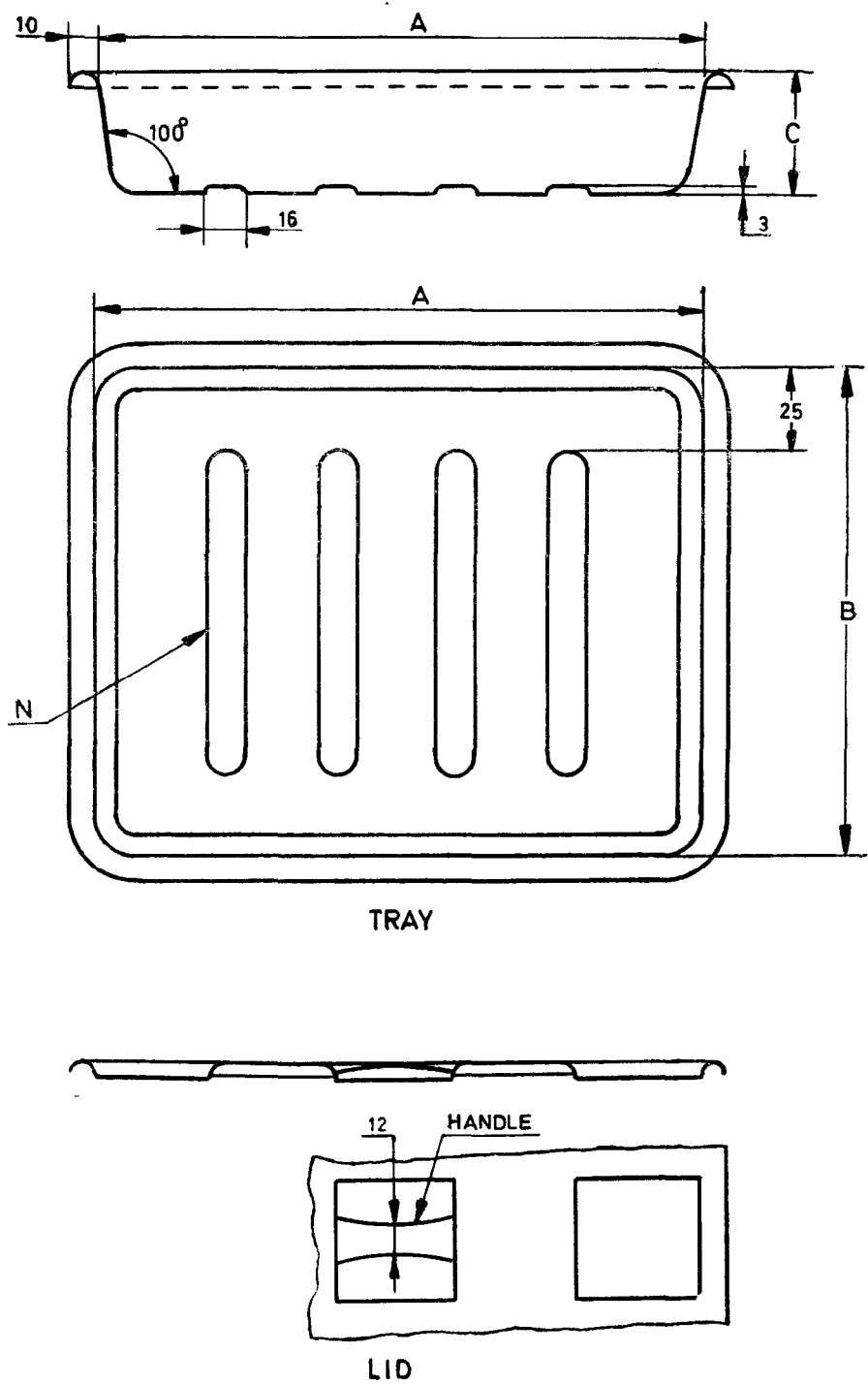


FIG. 1 INSTRUMENT TRAY (ENAMELLED IRON)

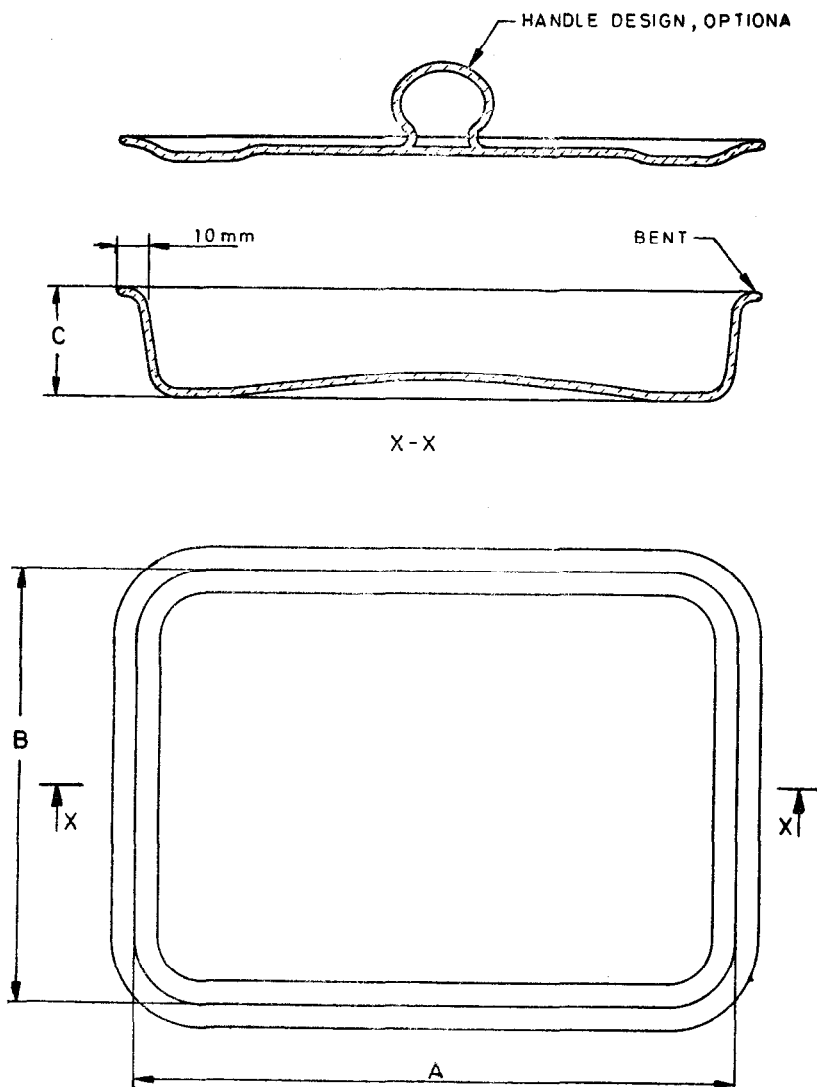


FIG. 2 INSTRUMENT TRAY (GLASS)

Table 1 Dimensions of Instrument Trays

(Clause 5.2)

All dimensions in millimetres.

Length	Width	Height	Minimum No. of Ribs	Minimum Finished Thickness		
				Stainless Steel	En amelled Iron (Base Metal)	Glass (At Any Point)
A	B	C	N	(5)	(6)	(7)
(1)	(2)	(3)	(4)			
200	150	50	3	0.5	0.5	2
250	200	50	3	0.5	0.5	2
300	150	50	4	0.5	0.5	2
300	250	50	4	0.5	0.5	2
350	250	50	4	0.5	0.5	2
450	300	80	5	0.5	0.5	2

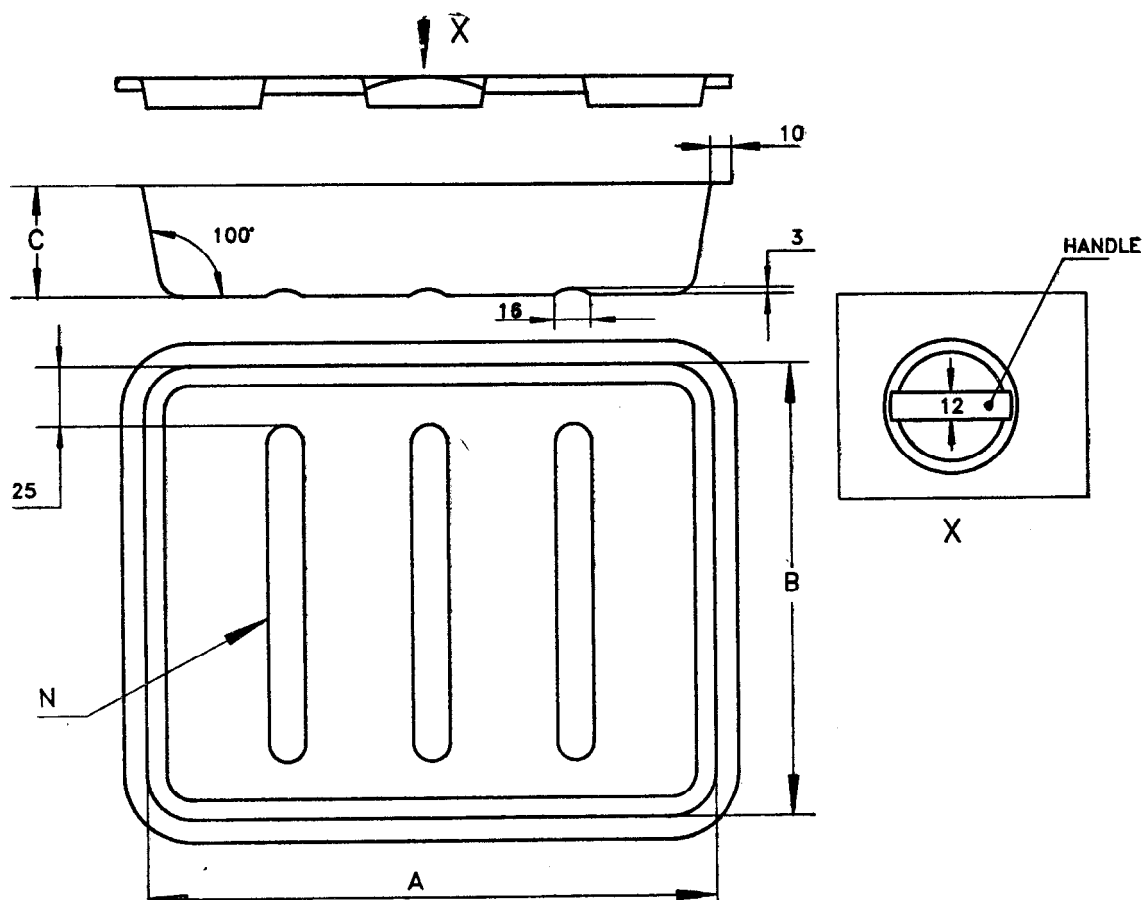


FIG. 3 INSTRUMENT TRAY (STAINLESS STEEL)

6.3 Enamelled Iron Trays

Vitreous enamel shall be applied in such a way that ground and cover coats shall be fairly uniform in thickness. Unless otherwise specified, the enamel shall have white colour with blue rim. The finished enamelware shall have a glossy finish and shall be free from blisters, crazing, cracks, chippings, pinholes, discoloration and other imperfections which affect the appearance or may impair the serviceability.

6.4 Glass Trays

The trays shall have a flame polished and well-formed rim and shall be free from chipping, discoloration, etc.

7 TESTS

7.1 Enamelled Iron Trays

These shall satisfy the test requirements specified in IS 3972 : 1968.

7.1.1 Citric Acid Spot Test

When subjected to test in accordance with IS 3972 : 1968, these shall pass the requirement for class AA.

7.2 Glass Trays

These shall satisfy the requirements given in 7.2.1.

7.2.1 Boiling and Thermal Shock

When tested in accordance with Annex A the trays shall not show any corrosion, chipping or cracking.

8 MARKING

8.1 Each instrument tray shall be suitably marked at the bottom with the following:

- Indication of the source of manufacture;
- Registered trade-mark or identification mark; and
- Size of the tray.

9 PACKING

9.1 Each instruments tray shall be wrapped in soft tissue and packed in accordance with the instructions of the purchaser.

ANNEX A*(Clause 7.2.1)***BOILING AND THERMAL SHOCK TEST****A-1 PROCEDURE**

A-1.1 The trays shall be completely immersed in distilled water in a closed vessel with a steam vent, in such a way and they do not touch the walls of the vessel. These shall be boiled for 6 hours taking care that the level of water is maintained approximately at the same place by adding more water every now and then. The

trays shall not show any sign of chipping, corrosion, cracking and crazing at the end of this period.

A-1.2 Thereafter, the trays shall be transferred into a container having tap water at $27 \pm 2^{\circ}\text{C}$ and kept immersed for 10 minutes and again in boiling water for 10 minutes. The trays shall not show any sign of corrosion, cracking and crazing.

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